

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

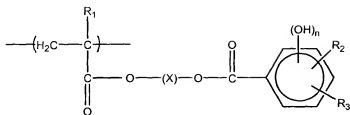
1. (currently amended): A negative-working planographic printing plate precursor that can be recorded by a solid laser or a semiconductor laser capable of radiating actinic ray in an ultraviolet to infrared wavelength region of 300 nm to 1,200 nm, and comprises a support having a recording layer containing a polymerizable composition-comprising provided thereon, wherein the polymerizable composition comprises:

a binder polymer containing at least an acid group having an acid dissociation constant (pKa) of 5.5 or more and a radical addition polymerizable group and having a weight average molecular weight in a range of 20,000 to 200,000; and

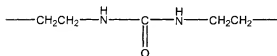
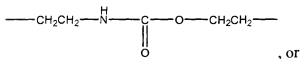
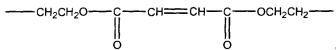
a radical-generating compound capable of generating a radical with light or heat,

wherein the binder polymer comprises a structural unit that has the acid group and that is represented by a formula selected from the group consisting of formulae (2), (3), (4), (5), (6), (7) and (8):

Formula (2)



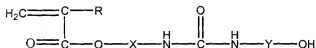
wherein in formula (2), X represents an alkylene group, a substituted alkylene group,
 $-\text{CH}_2\text{CH}_2\text{OCH}_2\text{CH}_2-$,



wherein R^1 represents a hydrogen atom, a halogen atom, or an alkyl group; each of R^2
 and R^3 independently represents a hydrogen atom, a halogen atom, an alkyl group, a substituted
 alkyl group, an aromatic group, a substituted aromatic group, $-\text{OR}^4$, $-\text{COOR}^5$, $-\text{COONHR}^6$, -
 COR^7 , or

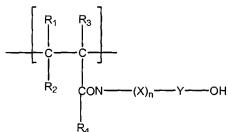
-CN; R² and R³ may be bonded to each other to form a ring; each of R⁴ to R⁷ independently represents an alkyl group or an aromatic group; and n represents 2 or 3;

Formula (3)



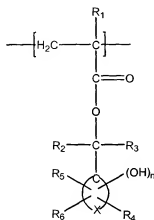
wherein formula (3), R represents a hydrogen atom or an alkyl group; X represents a divalent linking group; and Y represents a divalent aromatic group which may have substituents;

Formula (4)



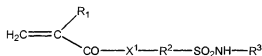
wherein in formula (4), each of R¹ and R² independently represents a hydrogen atom, an alkyl group, or a carboxylic acid group; R³ represents a hydrogen atom, a halogen atom, or an alkyl group; R⁴ represents a hydrogen atom, an alkyl group, a phenyl group, or an aralkyl group; X represents a divalent organic group linking a nitrogen atom to a carbon atom in an aromatic ring; n represents 0 or 1; and Y represents a phenylene group or a naphthylene group, each of which may have substituents;

Formula (5)

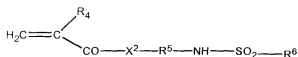


wherein in formula (5), R_1 represents a hydrogen atom, a halogen atom, a cyano group, or an alkyl group; each of R_2 and R_3 independently represents a hydrogen atom, a halogen atom, an alkyl group, an alkoxy group, or an aryl group; each of R^4 , R^5 and R^6 independently represents a hydrogen atom, an alkyl group, an aryl group or a halogen atom; X represents an atom necessary for completing a monocyclic or polycyclic carbocyclic aromatic ring system; and n represents 1, 2 or 3;

Formula (6)



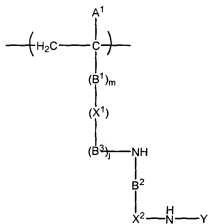
Formula (7)



wherein in formulae (6) and (7), each of X^1 and X^2 independently represents $-O-$ or $-NR^7-$; each of R^1 and R^4 independently represents $-H$ or $-CH_3$; each of R^2 and R^5 independently

represents an alkylene group, a cycloalkylene group, an arylene group or an aralkylene group each having from 1 to 12 carbon atoms and each of which may have substituents; R^3 represents H or an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents; R^6 represents an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents; and R^7 represents a hydrogen atom or an alkyl group, a cycloalkyl group, an aryl group or an aralkyl group each having from 1 to 12 carbon atoms and each of which may have substituents;

Formula (8)



wherein in formula (8), A^1 represents a hydrogen atom, a halogen atom, or an alkyl group having from 1 to 4 carbon atoms; B^1 represents a phenylene group or a substituted phenylene group; B^2 represents an alkylene group having from 2 to 6 carbon atoms or a phenylene group, wherein each of which may have substituents; B^3 represents a divalent organic group; each of X^1 and X^2 independently represents $-CO-$ or $-SO_2-$; Y represents $-CO-R^1$ or $-SO_2-R^1$; R^1 represents

an alkyl group, a substituted alkyl group, an aromatic group, or a substituted aromatic group; and each of m and j represents 0 or 1.

2. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein the acid group and the radical addition polymerizable group are introduced as a side chain of the binder polymer.

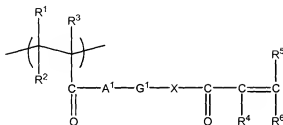
3. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein the acid group and the radical addition polymerizable group are introduced into terminal ends of a main chain of the binder polymer.

4. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein the pKa of the acid group is in a range from 7 to 11.5.

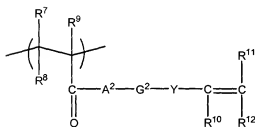
5-11. (canceled).

12. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein the binder polymer comprises at least one of a structural unit that includes the radical addition polymerizable group and that is represented by one of the following formulae (9) to (11):

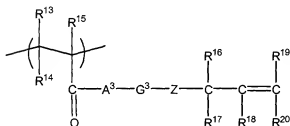
Formula (9)



Formula (10)



Formula (11)



wherein in the above formulas, each of A¹, A² and A³ independently represents an oxygen atom, a sulfur atom, or -N(R²¹)-; R²¹ represents a hydrogen atom or an alkyl group which may have substituents; each of G¹, G² and G³ independently represents a divalent organic group; each of X and Z independently represents an oxygen atom, a sulfur atom, or -N(R²²)-; R²² represents a hydrogen atom or an alkyl group which may have substituents; Y represents an oxygen atom, a sulfur atom, a phenylene group which may have substituents, or -N(R²³)-; R²³

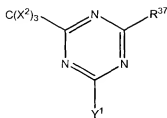
represents an alkyl group which may have substituents; and each of R^1 to R^{20} independently represents a monovalent inorganic or organic group.

13. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein a mixing ratio of structural units that have the acid groups relative to total structural units contained in the binder polymer is in a range of from 5 to 70 % by mole.

14. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein a mixing ratio of structural units that have the radical addition polymerizable groups relative to total structural units contained in the binder polymer is in a range of from 5 to 95 % by mole.

15. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein the radical-generating compound contains at least one selected from the group consisting of an aromatic iodonium salt, an aromatic sulfonium salt, a titanocene compound, and a trihalomethyl-S-triazine compound represented by the following formula (17):

Formula (17)



wherein in formula (17), X^2 represents a halogen atom; Y^1 represents $-C(X^2)_3$, $-NH_2$, $-NHR^{38}$, $-NR^{38}$, or $-OR^{38}$; R^{38} represents an alkyl group, a substituted alkyl group, an aryl group, or a substituted aryl group; and R^{37} represents $-C(X^2)_3$, an alkyl group, a substituted alkyl group, an aryl group, a substituted aryl group, or a substituted alkenyl group.

16. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, further comprising a radical polymerizable compound.

17. (currently amended): A ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 16, wherein a mixing ratio of the binder polymer to the radical polymerizable compound is in the range of 1:0.05 to 1:3 by weight.

18. (canceled).

19. (currently amended): The ~~polymerizable composition~~ negative-working planographic printing plate precursor according to claim 1, wherein the weight average molecular weight of the binder polymer is in a range of 78,000 to 175,000.

20. (canceled).

Claim 21. (new): The negative-working planographic printing plate precursor according to claim 1, wherein a weight average molecular weight of the binder polymer is in a range of 20,000 to 200,000.

Claim 22. (new): The negative-working planographic printing plate precursor according to claim 1, wherein the polymerizable composition comprises a sensitizing dye.

Claim 23. (new): The negative-working planographic printing plate precursor according to claim 1, wherein the support is an aluminum sheet a surface of which has been roughened.

Claim 24. (new): The negative-working planographic printing plate precursor according to claim 1, which further comprises a protective layer provided on the recording layer.

Claim 25. (new): The negative-working planographic printing plate precursor according to claim 24, wherein the protective layer comprises a polyvinyl alcohol.

Claim 26. (new): The negative-working planographic printing plate precursor according to claim 1, wherein the polymerizable composition comprises a sensitizing dye, and the support is an aluminum sheet a surface of which has been roughened.

Claim 27. (new): The negative-working planographic printing plate precursor according to claim 1, wherein the polymerizable composition comprises a sensitizing dye, the support is an aluminum sheet a surface of which has been roughened, and a protective layer is further provided on the recording layer.

Claim 28. (new): The negative-working planographic printing plate precursor according to claim 1, wherein the polymerizable composition comprises a sensitizing dye, the support is an aluminum sheet a surface of which has been roughened, a protective layer is further provided on the recording layer, and the protective layer comprises a polyvinyl alcohol.